Blizzard Bag #2
Biology

Name Period Date

CHAPTER TEST A, CONTINUED

____ **8.** Mendel knew that the variations in the offspring generations resulted from his experiments because he

a. allowed plants to cross-pollinate.
b. ensured that plants self-pollinated.
c. controlled the fertilization process.
d. changed the growing conditions.

____ **9.** Which pair of genes in Figure 6.2 would be most likely to be inherited together?

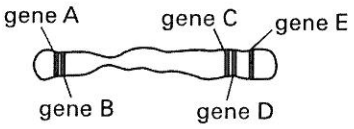

FIG. 6.2

a. A and B
b. A and C
c. A and D
d. A and E

____ **10.** Which event takes place during anaphase II of meiosis II?

a. Nuclear membrane breaks down.
b. Spindle fibers disassemble.
c. Sister chromatids separate.
d. Cytoplasm divides.

____ **11.** Recessive alleles may not be expressed because they are

a. masked by a dominant allele.
b. the least common allele in a population.
c. the most common allele in a population.
d. less likely to have crossing over.

____ **12.** Mendel's second law of genetics, the law of independent assortment, is one explanation of the

a. random fertilization of gametes.
b. genetic variation within species.
c. greater strength of dominant alleles.
d. final stages of gametogenesis.

____ **13.** Which of the following events is an important factor in increasing variety among sexually reproducing organisms?

a. testcross
b. gene linkage
c. crossing over
d. mitosis

____ **14.** Mendel's observation that traits are inherited separately was based on which set of experiments?

a. monohybrid crosses
b. purebred crosses
c. testcrosses
d. dihybrid crosses

____ **15.** Imagine two heterozygous parents. Each has a dominant allele X for brown eyes and a recessive allele x for blue eyes. The phenotypic ratio for brown:blue eyes in their children is

a. 1:2:1.
b. 3:1.
c. 9:3:3:1.
d. 1:3:1.

CHAPTER TEST A, CONTINUED

Use the diagram below to answer items 21–25. *(5 credits)*

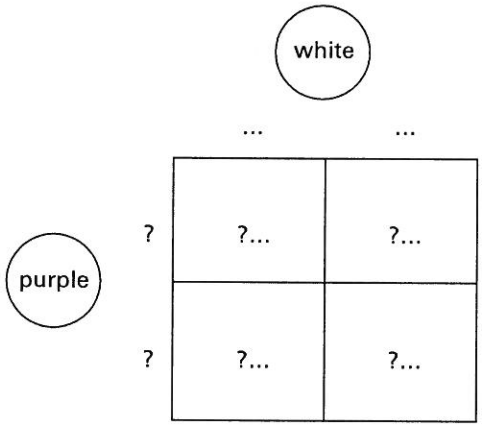

FIG. 6.4
Half of the offspring are purple and half of the offspring are white.

21. Figure 6.4 shows the results of a cross between a plant with a known genotype and a plant of unknown genotype. What is the term for this type of cross?

_____

22. In this plant species, the allele for purple flowers is dominant and the allele for white flowers is recessive. Write the genotype for the offspring that have white flowers.

_____

23. Write the genotype for the offspring that have purple flowers.

_____

24. Predict the genotype for the parent organism whose genotype is unknown. Write a sentence to support your answer.

_____

_____

_____

25. Suppose the genotype of the unknown plants were *FF*. How would this genotype affect the phenotypes of the offspring?

_____

_____